

ROBINS® DATA CODER PAT. PEND. CREATES AND EDITS DATA IN PUNCHED TAPES!

ROBINS DATA-CODER is a precision hand encoder for creating and editing punched tapes. A custom code wheel is supplied with 18 codes to your specifications.

There is no longer the necessity of carrying tapes to central computer rooms or departments. Just make any and all corrections on the spot. The simplicity of operation permits this hand encoder to be used by anyone, anytime, anywhere.

All operating parts are completely encased within a durable metal housing. A custom code wheel containing any 18 predetermined codes to your specifications is supplied with each Robins Data-Coder. To meet special needs, additional interchangeable code wheels may be ordered.

A selector knob located at the front of the unit permits prompt and easy selection of the code desired while an indicator window at the top front shows exactly which code is being punched. After each operation, the tape is automatically advanced to the next punching position. A chad chamber assures clean operation.

ROBINS DATA-CODER permits "erasing" (all punch) or editing of existing tapes. By application of Robins feed hole perforated Data-Saver Patches (#DSP-3), you are now able to punch new or corrected data without making completely new tapes.

If you order Robins Data-Coder during this Introductory Offer...Robins will send you these FREE accessories: A heavy cast iron stand for holding Data-Coder when it is to be used on a desk or table, a padded carrying and storage case for safe, easy transportation and storage, a clip-on chain for attaching Data-Coder to person or work station and to prevent accidental dropping of the unit, and 100 Data-Saver Patches.

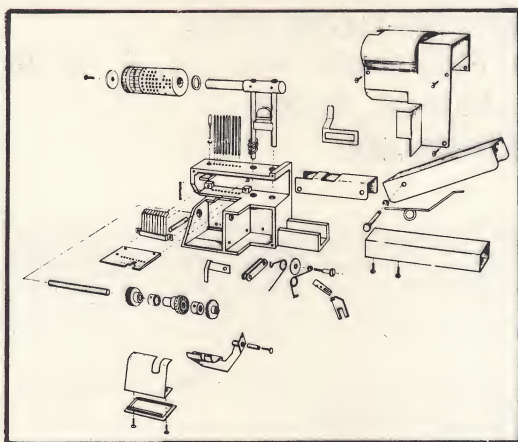
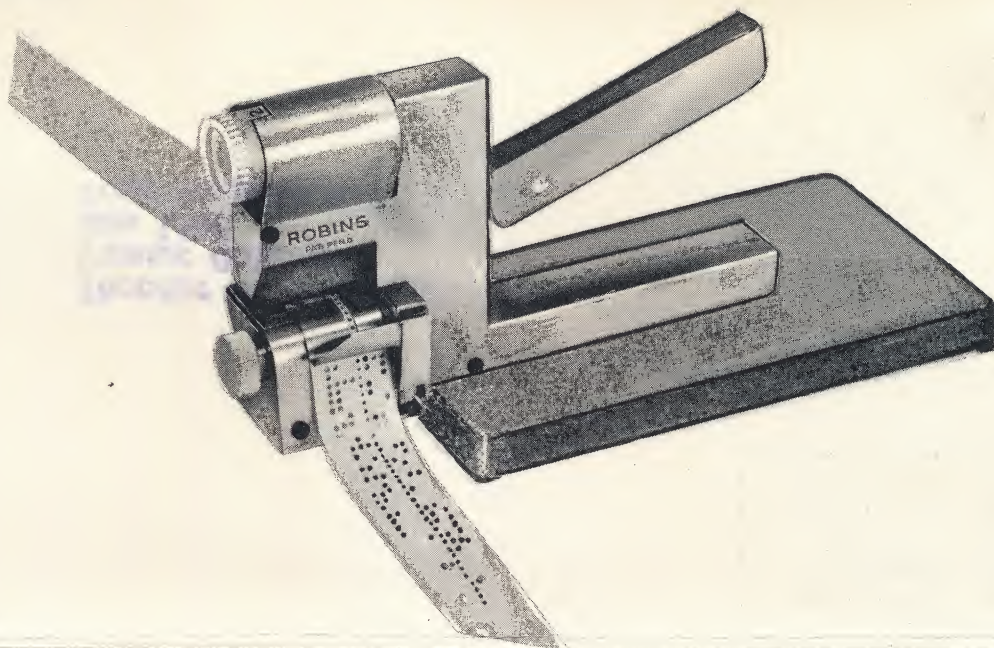
ROBINS DATA-CODER #DCN-1 for 5, 6, 7, and 8 Channel Punched Tapes.....\$295.00*

ROBINS DATA-CODER #DC-1 for Edge-Punched Cards.....\$295.00*

Specifications: Weight of Encoder.....2 lb.
Weight of Encoder and Stand.....4 1/2 lb.

Dimensions: Encoder: 7 1/2" x 1 1/2" x 4" ht.
Encoder on Stand: 9 1/4" x 3 5/8" x 5 1/8" ht.

Shipping Weight with Accessories.....6 1/2 lb.

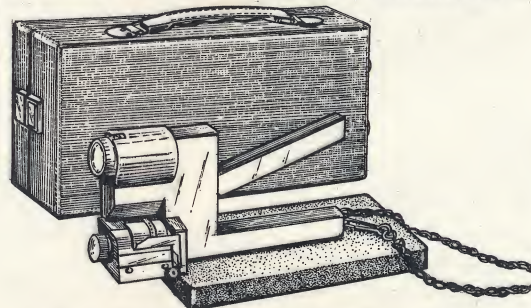


ROBINS DATA-CODER is a precision hand encoder for creating and editing punched tapes. A custom code wheel is supplied with 18 codes to your specifications.

SATISFACTION IS GUARANTEED
USE ROBINS DATA-CODER ON A
30 DAY FREE TRIAL BASIS.

ROBINS DATA DEVICES, INC.

15-58 127th STREET, FLUSHING, N.Y., 11356



SPECIAL INTRODUCTORY OFFER!

**ROBINS DATA-CODER IS BEING
OFFERED TO YOU ON A 30 DAY
FREE TRIAL — SATISFACTION IS
GUARANTEED...**

You may return your Data-Coder for any reason whatsoever within 30 Days for full credit.

**ORDER EITHER MODEL DATA-CODER
TODAY WITH CUSTOM CODE WHEEL
CONTAINING 18 CODES...YOU WILL
RECEIVE FREE!...**

**CARRYING AND STORAGE CASE,
STAND, CHAIN, AND 100 PATCHES
—VALUE \$42.75.**

ROBINS DATA-DEVICES, INC. DATA-CODER INTRODUCTORY OFFER—30 DAY FREE TRIAL BASIS THIS OFFER EXPIRES NOVEMBER 30, 1964

Gentlemen: Send us your Data-Coder which includes **FREE** Carrying Case, Stand, Chain, and 100 Patches. The complete cost is...

- ☐ #DCN-1 for Punched Tapes.....\$295.00 (No Federal Excise Tax)
☐ #DC-1 for Edge-Punched Cards.....\$295.00 Plus Federal Excise Tax

P.O. #.....

Date:.....

Name of Firm.....

Address.....

City.....Zip Code.....State.....

Authorizing Signature.....

- ☐ Send us Robins Data-Deives, Inc. latest catalog of EDP Accessories.

*Federal Excise Tax on Card Punch (DC-1) only.

*plus reader service

TAKE ADVANTAGE OF THIS
INTRODUCTORY OFFER!

GET **FREE!**...

ACCESSORIES VALUE \$42.75

WITH YOUR DATA-CODER

ORDER! SATISFACTION

IS GUARANTEED — USE

ROBINS DATA-CODER ON A

30 DAY FREE TRIAL!

FILL OUT THE ATTACHED
ORDER BLANK AND MAIL
TODAY!



B U S I N E S S R E P L Y M A I L

No postage stamp necessary if mailed in the United States

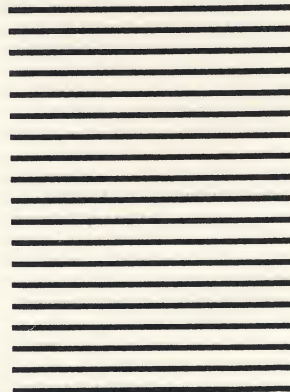
postage will be paid by

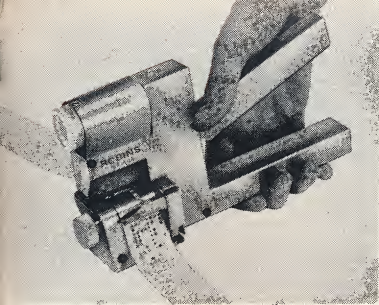
ROBINS DATA DEVICES, INC.
15-58 127th STREET
FLUSHING, N.Y., 11356

FIRST CLASS

PERMIT No. 7592

FLUSHING, N. Y.





Hand tape punch \$300.

BULK RATE

U.S. Postage

PAID

Flushing, N. Y.

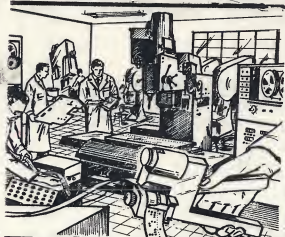
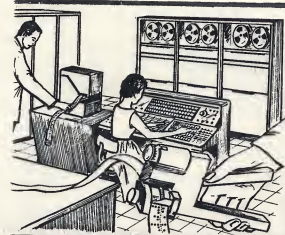
Permit No. 266

**INTRODUCING...
A NEW HAND FIELD
ENCODER FOR
CREATING AND
EDITING DATA IN
PUNCHED TAPES...**

**SPECIAL
OFFER!**

Theodor H. Nelson, EDP Cons.
Vassar College
Box 1546
Poughkeepsie, N.Y.

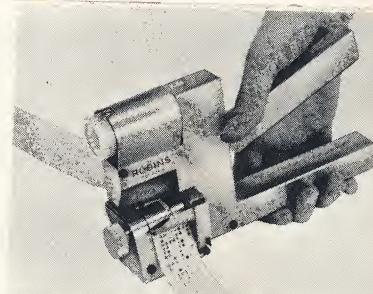
THIRD CLASS MAIL



ROBINS® DATA CODER PAT. PEND.

A NEW COMMUNICATIONS TOOL EDITS AND CREATES DATA IN 5, 6, 7, AND 8 CHANNEL PUNCHED TAPES... ANYTIME...ANYWHERE!

Avoid costly transcription errors in your data collection process. Don't waste time transcribing written information to punched tapes. Encode data directly into "machine language". Correct or edit existing punched information by simply "erasing" or by applying a patch and repunching new data. Create numerical control and automation tapes in the shop, at the machine. Now scientists and



engineers in the field and lab, meter readers, factory personnel, computer technicians, reservation clerks, and hundreds of others can punch data as it develops without "tying-up" expensive encoding equipment. There are thousands of uses of ROBINS DATA-CODER in electro data processing, teletypewriter systems, graphic arts, machine tool and computer programming, etc.

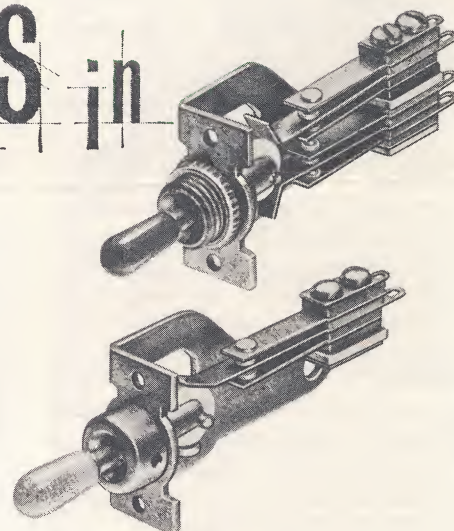


**INTRODUCTORY OFFER! GET FREE ACCESSORIES
VALUE \$42.75 WITH YOUR DATA-CODER**

**FIND OUT FOR YOURSELF WHAT
ROBINS DATA-CODER CAN DO
FOR YOU ON A FREE 30 DAY
TRIAL BASIS!**

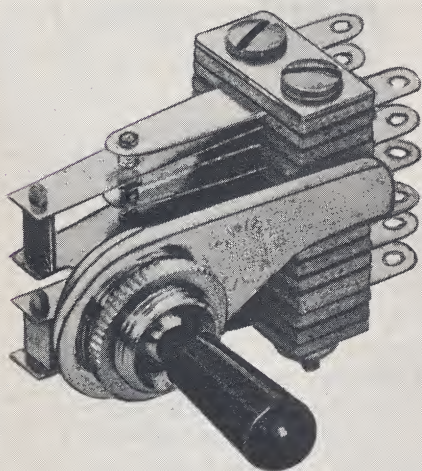
ENGINEERING*bulletin*File with Catalogs
S-302, S-307, S-309**NEW DESIGN TRENDS in
LEVER SWITCHES**

Fig. 1—The miniature "Feather Switch" above requires only 7/16" front panel mounting space.



◆ Making or breaking electrical switch contacts by using a lever to move an insulated roller toward or away from stack leaf switches is not new. The telephone industry has used such lever operated or "key" switches for years.

Fig. 2—When behind-panel depth is limited, this shallow-design switch comes to the rescue.



What is new and exciting, however, are the rapid strides made in lever switch design to meet the special needs and human engineering factors of the electronic industry—miniature types with "feather touches," 3-color illuminated types, and others which we will examine in short order. But, first, let us look at some design advances which are not so evident.

For example, lever switches are highly reliable components due to some interesting innovations:

—With relatively no forms at point of flexing, relatively long leaf springs can be flexed repeatedly without passing elastic limits of the material.

—Stack springs are maintained at proper alignment under adverse conditions, say, when a screw through the stack loosens. A leading switch manufacturer, Switchcraft, insures proper alignment in this event by fixing leaf springs in place with press-fitted tubes; screws inserted inside the tubes provide added protection against shifting contact springs. To prevent the springs from shifting position everytime a lever is thrown, the manufacturer uses a rugged T-shape frame constructed of press-welded steel.

—Spring-tempered nickel silver leaf springs maintains steady, high contact pressure.

Although lever actuated switches are favored because of their wiping

contacts, when used in low current-low voltage applications where film barriers could increase contact resistance, it is recommended that welded-cross-bar palladium contacts be specified.

Space and Function Attributes

A major benefit of lever switches is the small amount of front-panel space they require. This is underscored by the "Feather Lever Switch" in Fig. 1. This new miniature Switchcraft lever switch requires only 7/16" front-panel mounting space. A molded nylon roller gives it the soft, sure lever operation implied by its name.

An interesting feature of this "Feather Switch" is the availability of push-on molded-plastic knobs in 10 different colors. The switch's miniature machine-brass, nickel-plated actuator is also suitable for use without push-on knobs.

The "Feather" Switch reduces behind-panel space needs considerably. With total length of only 1 3/4", this new switch requires much less depth than do conventional lever switches. Of course, smaller switches

cannot stack as many leaf springs as large types. A "Feather" Switch, in spite of its small size, provides for a wide choice of switching circuit combinations; up to 8 "A" or 4 "C" contact forms on a 3-position type switch, which meets most switching requirements.

For applications where only a minimum amount of depth is available behind the panel, Switchcraft "Lev-r" Series 12000 Switches are helpful. Here, as shown in Fig. 2, leaf springs are mounted parallel to the front panel.

Illuminated Lever Switches

A major advantage held by lever switches over other switch types is being able to observe positioning of actuators from a distance. There are many instances, however, when this becomes difficult to do accurately. Perhaps too many switches are used on one panel to commit positions to memory; or equipment may be in a darkened area. Illuminated switches, like the 3-color illuminated type in Fig. 3, overcome these problems while retaining the high dependability of leaf spring switches.

The basic operating principle of the "Lever-Lite" Switch pictured here is shown in Fig. 4. Light from a 6 volt or a 28 volt lamp is projected to an individual color filter at the rear of a translucent lever. Three color filters may be used to identify "UP," "NEUTRAL," and "DOWN" positions. Thus, one switch with a single lamp combines functions of one switch with three pilot lights. The simple mechanical operation of a one lamp, 3-color system overcomes reliability problems of electro-mechanical switching and wiring to three separate indicator lamps.

As shown in Fig. 3, the snap-out lamp assembly of a "Lever Lite" Switch is easily removed for lamp bulb replacement. Its circuit is independent from switch circuits. A spring-loaded socket virtually eliminates the possibility of a lamp being jarred loose.

"Lever Lite" Switches are available in two different series. A 25000 Series has replaceable color filters; a 27000 Series has permanent, factory-installed color filters. The 27000 Series trades color filter change-over in the field for superior illumination in ambient light conditions. Also, an

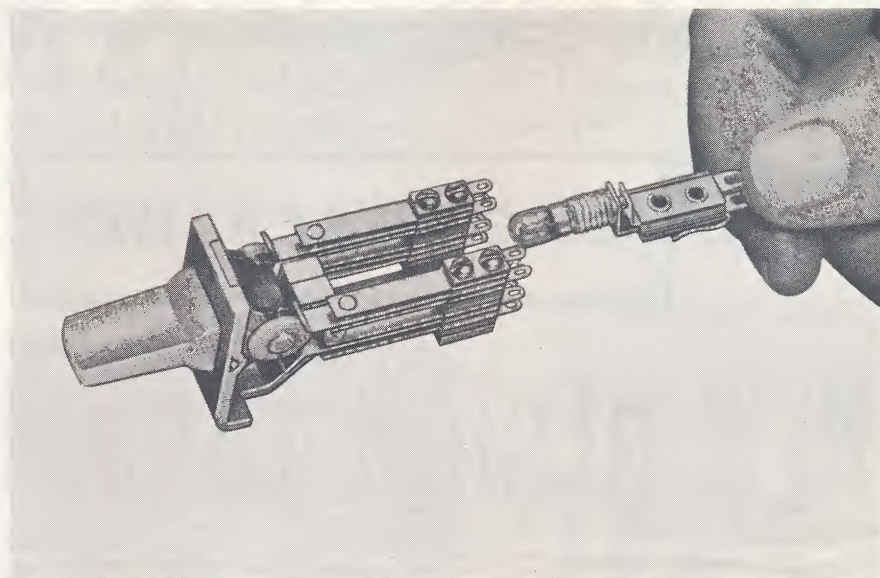


Fig. 3—One-lamp, 3-color illuminated switches meet functional and human engineering needs of complex control panels.

ambient light shield is available for the 27000 Series Switches for use when mounted next to each other on minimum mounting centers ($\frac{3}{4}$ "). The shields shut out light from sides of switches. Consequently, reflected light from a lighted switch cannot interfere with another switch's color illumination when mounted on crowded control panels. The 27000 Series has a cybernetically-designed contoured, extra-large lever which requires only slightly more control panel space than the 25000 Series type.

Light transmission efficiency of different colors varies. Amber passes the greater amount of light and is therefore generally chosen as one of the three color filters.

Illuminated lever switches have been specified for large communications systems, computers and tracking stations based on meeting both the functional requirements of equipment and present human engineering standards for front-panel display.

The "Lever-Lite" Switches are in the same favorable price range as larger telephone type lever switches, such as the "Telever" Switch in Fig. 5. This rugged lever switch has some versatile switch function provisions.

For instance, a removable stop plate can be used to determine whether the lever action will be a locking type (30° of throw) or momentary type (18° of throw). The stop plate can be mounted on either side of the lever or on both sides. The switch also features a non-turn device design; a slot in its bushing engages a

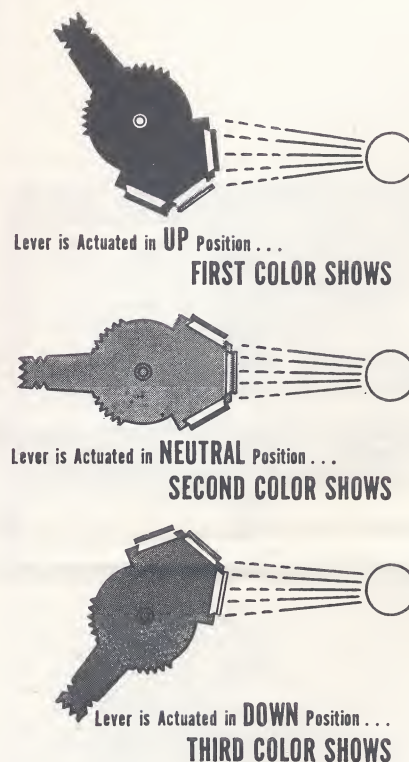


Fig. 4—Principle of one-lamp, 3-color illuminated switch.

washer to lock it to the panel opening.

The utility and dependability of lever switches are being recognized by more and more manufacturers. With new and varied applications, it is important to discuss uses with a supplier with whom you are working closely.

When ordering lever switches, consider the check list of points to consider shown in the specifying guide here.

LEVER SWITCH SPECIFYING GUIDE

- ☐ ELECTRICAL
 - Voltage:
 - Current:
 - Load:
- ☐ OPERATION
 - Contact Arrangement:
- ☐ ACTUATION
 - Two Position:
 - Three Position:
 - Locking, Non-Locking:
- ☐ ENVIRONMENT
 - Shock:
 - Vibration:
 - Corrosion Resistance:
 - Mil Specs:
- ☐ MOUNTING
 - Height, Width, Depth:
 - Terminal Type:
 - Special Hardware:
 - Panel Thickness:
- ☐ GENERAL
 - Color Coding:
 - Lighting:
 - Finish:
 - Appearance:
- ☐ APPLICATION
 - Specific details of switch functions of actual circuit to be used: dry circuit, wet circuit, UL approval, etc.
- ☐ QUANTITY
- ☐ TARGET PRICE
 - (For Custom Design)

Fig. 5—Removable stop plates give choice of locking or momentary lever switch action.

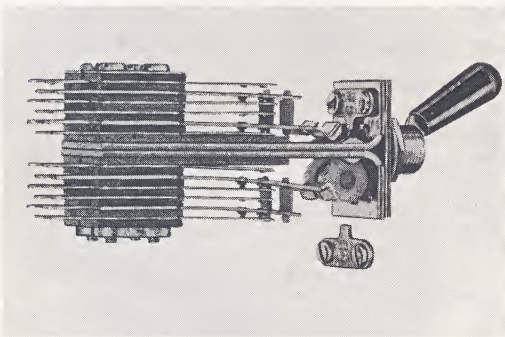
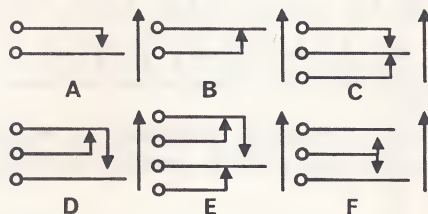


Fig. 6—Basic contact forms.



If a lever switch is to be used in a dry circuit or requires UL approval, to name two possible application areas that will influence design, the supplier should be advised. Also, obtain a sample before committing yourself to a large order. An operating prototype sometimes reveals problems that were never considered on drawing boards.

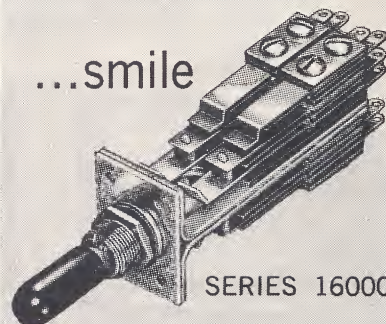
Standard spring switching circuit combinations, as listed in Fig. 6, are generally stocked in large quantities by most switch manufacturers and will meet requirements of most applications. To avoid ordering special switches, and to keep cost at a minimum, it is sometimes possible to use a larger standard circuit, provided of course that the circuit has the spring combination to fulfill your requirements. ♦

Reprinted from:

Special Report on Electronics • June 1964

when you specify **SWITCHCRAFT "TELEVER"** TELEPHONE TYPE **SWITCHES**

...smile



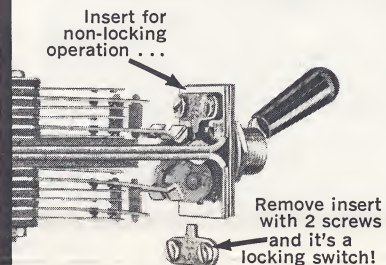
SERIES 16000

...you've done
your product
a favor

1. OUTSTANDING QUALITY

Virtually indestructible "T-Beam" frame. Proved and preferred Leaf-type switch stacks go on-and-on after other types wear out. Materials and finishes meet Mil specs . . . overall design meets rigid telephone company standards (but with lots more uses).

2. CHANGEABLE FUNCTIONS



Now it locks—now it doesn't. Exclusive removable inserts converts it either way—even in the field. Can be locked in any one or all positions.

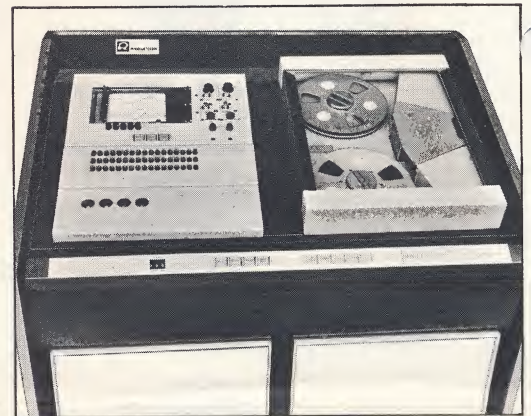
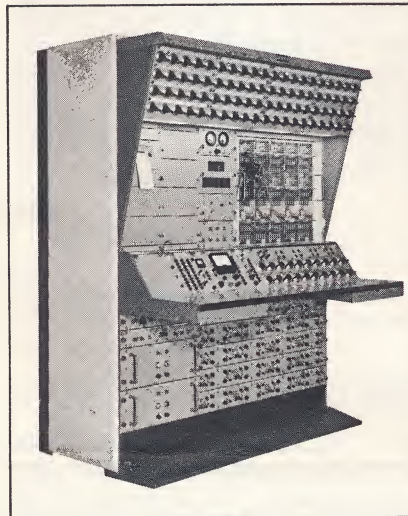
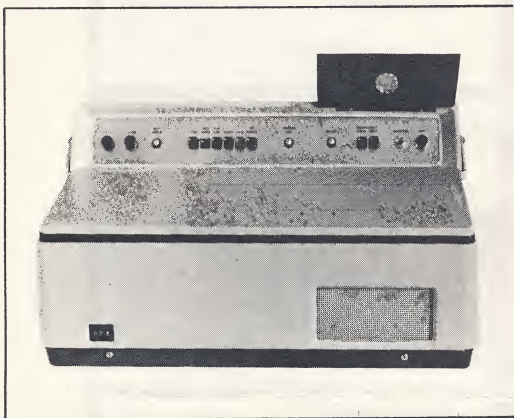
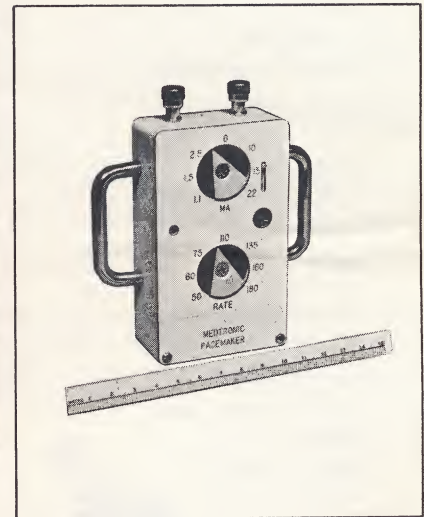
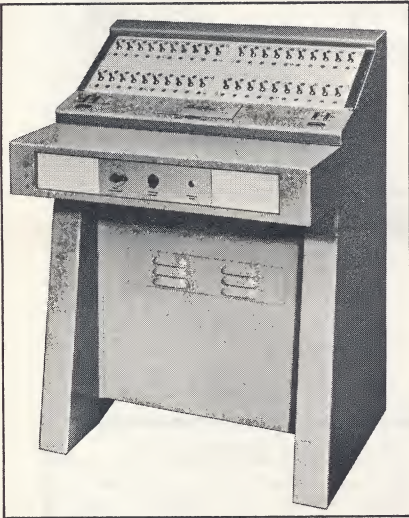
3. TOPS IN VERSATILITY

Incomparable flexibility in contact arrangements (up to 8-pole, double throw). Two and three position. Palladium or fine silver contacts. Unsurpassed for any critical switching function—telephone companies, communications and test equipment, computers, ground support equipment, etc.

Write for bulletin S-302, or see your authorized Switchcraft distributor for immediate delivery at factory prices.

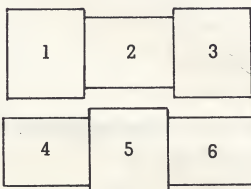
Switchcraft combines knowledge, techniques and experience to provide the right switch at the right price.

THE SWITCHES SHOWN BELOW HAVE BEEN CREATED TO PROTECT THE ORIGINAL EQUIPMENT MANUFACTURERS' PRODUCTS RELIABILITY — THESE SWITCHES ARE AVAILABLE TO YOU.



SPECIAL SWITCH NEEDS

These applications merely highlight the vast capabilities of Switchcraft switches. You are invited to call on Switchcraft engineers for a switch to provide the ultimate in trouble free operation of your products.



1. "Lev-R Switches" used in a Drive-In Restaurant Control Console, mfr. by Motiograph, Inc.
2. "Multi-Switch" used in steel processing Control Console, mfr. by General Electric Co.
3. "Button-Switch" as used in the Pacemaker Heart-beat Regulator, mfr. by Med-Tronics, Inc.
4. "Multi-Switch" mounted in the Electronic Secre-

tary telephone answering set, mfr. by Electronic Secretary Industries, Inc.

5. "Multi-Switch" used in an Analog Computer, mfr. by Electronic Associates, Inc.
6. "Multi-Switches" used in a Mobile Date Handling System, mfr. by Radiation, Inc.

SWITCHCRAFT®
INC.

We reserve the right to change the prices, specifications and/or part numbers contained herein when circumstances make it necessary.

GENERAL OFFICES AND PLANT
5555 N. ELSTON AVENUE
CHICAGO, ILLINOIS 60630
TEL.: 774-1515 (Area Code 312)
TWX: 312 265-1314

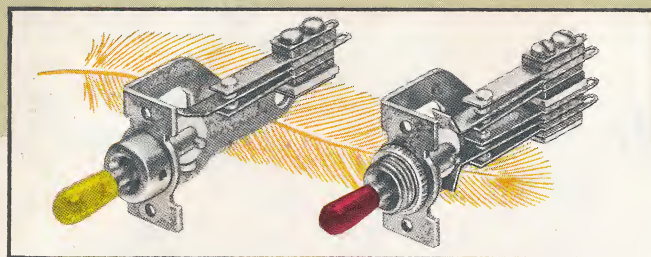
Printed in U.S.A.

Catalog No. S-309

LEVER TYPE SWITCHES

"FEATHER LEVER SWITCH," Series 29000, 31000 Page 1
 "LEVER-LITE SWITCH," Series 27000 Pages 2, 3
 "LEV-R SWITCH," Series 28000 Page 4

Available at all leading Electronics and Radio Parts Distributors



"FEATHER-LEVER SWITCHES" SERIES 29000, 31000

CONTACT ASSEMBLY	DIM. "X" MAX.	DIM. "Y" MAX.	NON-LOCKING*			
			PART NO.	U.S.A. LIST PRICE	PART NO.	U.S.A. LIST PRICE
	3/8"	—	29201	\$1.95	31201	\$1.95
	3/8"	—	29203	2.25	31203	2.25
	3/8"	—	29204	2.50	31204	2.50
	1/2"	—	29206	2.75	31206	2.75

TWO POSITION TYPE

CONTACT ASSEMBLY	DIM. "X" MAX.	DIM. "Y" MAX.	NON-LOCKING*			
			PART NO.	U.S.A. LIST PRICE	PART NO.	U.S.A. LIST PRICE
	3/8"	13/32"	29303	2.50	31303	2.50
	3/8"	13/32"	29304	2.60	31304	2.60
	3/8"	13/32"	29306	2.90	31306	2.90
	3/8"	13/32"	†29307	2.95	†31307	2.95
	1/2"	5/8"	29312	3.75	31312	3.75

† INTER-COMM. SWITCHES

CONTACT ASSEMBLY	DIM. "X" MAX.	DIM. "Y" MAX.	NON-LOCKING*			
			PART NO.	U.S.A. LIST PRICE	PART NO.	U.S.A. LIST PRICE
	3/8"	11/32"	29303T	2.50	31303T	2.50
	3/8"	13/32"	29307T	2.95	31307T	2.95

Standard Package—5

See next column for Push-on Knob part numbers

*Add Suffix "L" to part number for LOCKING TYPE.

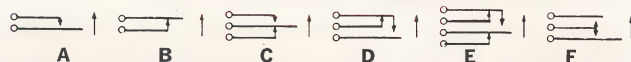
†Inter-communications "Talk-Listen" Switches, lever locks on one side of neutral and operates non-locking on the other side.

‡Center position open (OFF).

Listed in the table below are standard circuits in both two and three position actuators. For applications requiring special circuit arrangements, refer to the BASIC CONTACT FORMS. Specify the circuits needed by referring to the letter identification and the respective location on the frame.

MOUNTING—Series 29000 and 31000 "Feather-Lever Switches" mount on 7/16" centers, in a 3/8" dia. hole, in panels up to 1/8" thick. Series 29000 requires only a single hole for mounting. An attractive nickel plated knurled locknut is furnished with the switch. Series 31000 mounts with two No. 2-56 machine screws (not furnished with switch). See drawing for mounting dimensions.

BASIC CONTACT FORMS



SPECIFICATIONS

FRAME: Steel, iridescent iridite over cadmium plating.

BUSHING AND SHAFT: Brass, nickel plated.

SPRINGS: Spring tempered nickel silver.

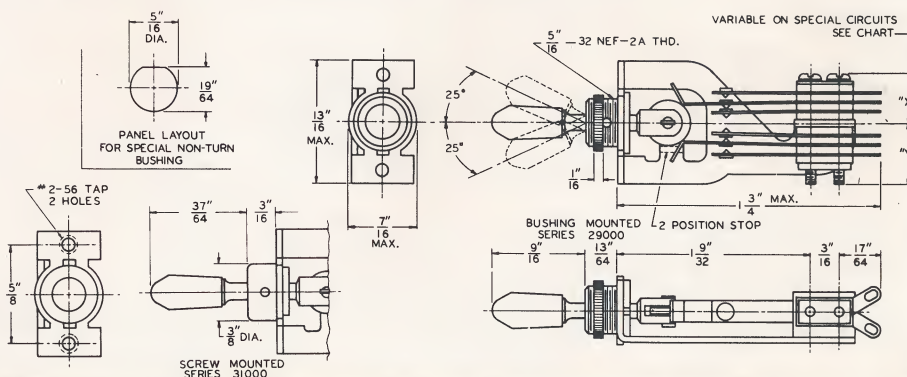
CONTACTS: Fine silver, standard. Welded cross bar palladium on special order.

INSULATION: Paper base phenolic spacers with plastic tubing through the stack. Lifters of machined fiber.

ACTUATED ROLLER: Nylon.

KNOBS: Resilient plastic.

MOUNTING HARDWARE: Series 29000, supplied with one knurled nickel plated brass locknut (T-2160).



SWITCHCRAFT, INC.

GENERAL OFFICES AND PLANT
 5555 N. ELSTON AVE., CHICAGO 30, ILLINOIS, U.S.A.
 Area Code: 312 Tel.: 774-1515 TWX: 312 265-1314
 Canadian Rep.: Atlas Radio Corp., Ltd., 50 Wingold Avenue
 Toronto, Ontario, Canada

FOR
 DETAILS
 CONTACT

"FEATHER LEVER SWITCHES"—SERIES 29000

New Switchcraft miniature lever switches cut your panel space and depth behind panel requirements at least 25%.

You can get the exact "Feather-Lever Switches" your equipment requires. A wide variety of circuits are available in bushing or screw mounted types, locking and non-locking actions, two or three positions—plus Knobs in 10 brilliant colors.

DESIGN FEATURES

SMALL SIZE, LIGHT WEIGHT of switch means space saving, more flexibility in mounting and simplified installation.

MOLDED NYLON ROLLER designed to assure smooth, easy lever operation over entire life of the switch.

RUGGED FRAME withstands rough usage, shock and vibration.

PUSH-ON COLOR KNOBS are available in 10 colors for almost unlimited variety of color combinations and coding.

BALANCED LEVER design increases life of switch and leaf springs.

FAN LUGS reduce wiring time and installation costs.

MODEL FLEXIBILITY—The "Feather-Lever Switch" is available in 2 and 3 position models, locking and non-locking types, bushing (Series 29000) or screw (Series 31000) mounting. It is an ideal Inter-Communication "Talk-Listen" switch; for such applications, we offer two additional circuits with the special feature where the lever locks on one side of neutral and operates non-locking on the other side. See Chart for Part Numbers. Series 29000, is also available, on special order, with a non-turn "D-shaped bushing." See drawing below. Add Prefix "R" to part number when ordering this special feature.

OPERATING FEATURES—The "Feather-Lever Switch" utilizes Switchcraft's new "TINI-STACK" switch stack. This miniature switch stack is made up of special nickel silver springs with fine silver contacts, rated at 2 amperes, 200 watts, max., A.C., non-inductive load. Fine silver contacts are furnished as standard, palladium contacts for low current, low voltage circuits are available on special order.

PUSH-ON COLOR KNOBS

An almost unlimited variety of color combinations and coding is at your finger-tips with Switchcraft's new, pliable, "Push-On Color Knobs." These molded plastic knobs come in 10 sparkling colors. A color knob can be changed quickly and easily—simply pull-off present knob and push-on a new one. For permanence, a small amount of plastic cement will adhere knob to lever. The brass lever of the switch has been so styled and finished (in bright nickel plate), that it can be used as the actuating knob, if desired.

A black plastic push-on knob is furnished with each "Feather-Lever Switch," unless otherwise specified. Additional knobs, in various colors and color combinations, 10 per package, can be ordered as follows:

Part No. K-108—Plastic Knobs, one of each color: Red, Black, Green, Blue, White, Brown, Orange, Yellow, Ivory, Gray; Part No. K-109—Red; Part No. K-110—Black; Part No. K-111—Green; Part No. K-112—Blue; Part No. K-113—White; Part No. K-114—Brown; Part No. K-115—Orange; Part No. K-116—Yellow; Part No. K-117—Ivory; Part No. K-118—Gray.

U.S.A. LIST PRICE—Package of 10—\$0.75

New 3 COLOR ILLUMINATED LEVER SWITCH!

THE "LEVER-LITE SWITCH" SERIES 27000

NEW DESIGN

Switchcraft's new "Lever-Lite," illuminated lever switch utilizes a new lever and color filters for superior illumination—even in high ambient light.

This low-cost, versatile switch combines the functions of three pilot lights and one ordinary switch into a compact unit with unusual reliability.

New color filters, installed at the factory, provide color coding of each of the three switch positions. Illuminated colors are readily visible through the new contoured, extra large lever which was designed to meet Human Factors Engineering Standards.

The "Lever-Lite" is made with high quality materials which are finished for corrosion resistance. The stack switch assembly's special nickel silver springs provides rugged, highly reliable switching that meets military ground support equipment specifications.

MODEL FLEXIBILITY

This "tri-purpose" switch combines three separate colors with a multiplicity of switching circuits. The "Lever-Lite," Series 27000, is available in 2 and 3 position types, locking and non-locking.

Dual "Tini-Stack" stack switches can be mounted on frame to provide up to 16 switching circuits. (See Operating Features for Electrical Specifications on Stack Switches.)

Color filters are permanently installed at the factory. On all standard two position switches, Amber lights in the "CENTER" or "NEUTRAL" position and Green lights in the "DOWN" position.

On all standard three position "Lever-Lite" switches, Red lights in the "UP" position, Amber in the "CENTER" position and Green in the "DOWN" position.

Listed below are the most popular color combinations and circuits.

"LEVER-LITE"—SERIES 27000 PART NUMBERS

TWO POSITION TYPES

Amber in NEUTRAL Position—Green in DOWN Position					
SCHEMATIC CIRCUIT	DIM. "X" MAX.	DIM. "Y" MAX.	PART NUMBERS NON- LOCKING		U.S.A. LIST PRICE
	1 1/2"	1 5/8"	27206L	27206	\$6.50
	1 1/2"	1 5/8"	27212L	27212	8.00

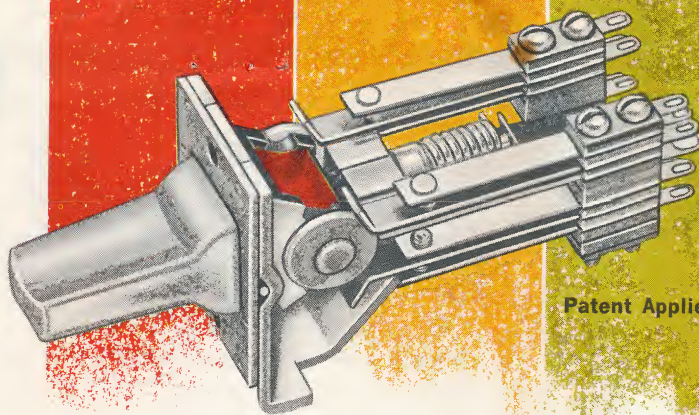
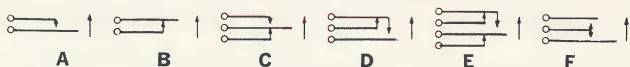
THREE POSITION TYPES

Red in UP Position—Amber in NEUTRAL Position— Green in DOWN Position					
	1 1/2"	1 5/8"	27306L	27306	6.50
	1 1/2"	1 5/8"	27307L	27307	6.65
	1 1/2"	1 5/8"	27312L	27312	8.00

Standard Package 1—*Center position open (off)

Listed in the table below are standard circuits in both two and three position actuators. For applications requiring special circuit arrangements, refer to this table of BASIC CONTACT FORMS. Specify the circuits needed by referring to the letter identification and the respective location on the frame. For information on ordering special switches see "HOW TO ORDER LEVER-LITE."

BASIC CONTACT FORMS



LIGHTING METHOD

As an individual Color Filter is moved in position, by actuating the lever in an "UP," "NEUTRAL" or "DOWN" position, the illumination from the lighted lamp passes through the Color Filter and is projected to the lever.

Five "Human-Engineered" Color Filters are available: Red, Green, Blue, Yellow, and Amber. A filter is not used when clear illumination is desired in any of the positions.



Lever is Actuated in "UP" Position
First Color Shows



Lever is Actuated in "NEUTRAL" Position
Second Color Shows



Lever is Actuated in "DOWN" Position
Third Color Shows

LAMPS

Lamps for the "Lever-Lite" are mounted in a "snap-out" assembly. The screw base lamps are spring loaded in the assembly to eliminate any possible cold flow. Two lamp voltages are available—6 V and 28 V.

One 6 V lamp, Part No. P-1217, is furnished with each switch, unless otherwise specified.

PART NO.	U.S.A. LIST PRICE	DESCRIPTION
P-1217	\$1.20	6 V miniature screw base lamp. Industry No. 1768. Draws—200ma.
P-1218	2.00	28 V miniature screw base lamp. Hudson Part No. 369. Draws—40ma.

OPERATING FEATURES

The "Lever-Lite" Series 27000, utilizes the "Tini-Stack," a highly reliable miniature stack switch assembly. The springs are assembled into a conventional stack assembly, insulated from each other by phenolic spacers with insulating tubing press-fit through the stack to assure correct alignment of the contacts and provide high insulation resistance. The "Tini-Stack" has special nickel silver springs with fine silver contacts rated at 3 amperes, 300 watts, max., A.C. non-inductive.

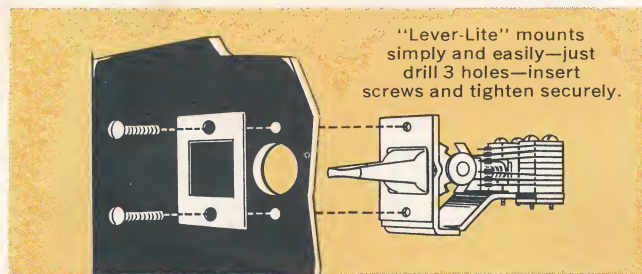
Palladium contacts for low currents, low voltage circuits are available on special order.

Standard spring combinations, listed in the Part No. chart, will meet the requirements of most applications. To avoid ordering special switches it is sometimes possible to use a larger standard circuit, provided, of course, the circuit has the spring combinations to fulfill the requirements.

MOUNTING

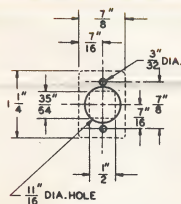
Series 27000 "Lever-Lite" requires only slightly more than one square inch of panel space and can be mounted on $\frac{3}{4}$ " centers. Mounts with two No. 2-56 machine screws (not furnished with switch). Refer to drawing for mounting dimensions.

An escutcheon plate is available, Part No. 532, for greater convenience in mounting. Simply drill three holes in panel, insert screws (two No. 2-56 machine screws furnished with escutcheon plate) and tighten securely.



Escutcheon Plate—
Part No. 532.
For mounting "Lever-Lite"
on $\frac{7}{8}$ " centers.

Dotted lines indicate
escutcheon plate. Solid
lines indicate the
3 mounting holes to be
drilled.



Part No. 532

U.S.A. List Price \$0.25

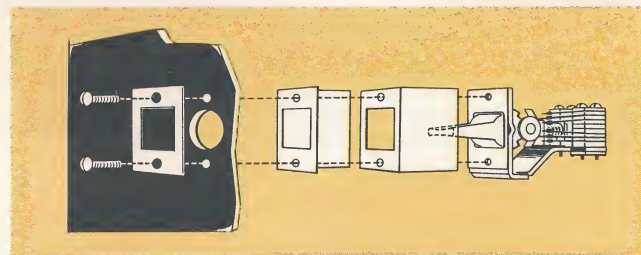
HOW TO ORDER "LEVER-LITE"

To simplify ordering special "Lever-Lite" Switches for production quantities, we suggest you use the following "Check List" as a guide.

- Determine the number of positions required.
 - ☐ Two Position Types.
 - ☐ Three Position Types.
- Specify the switching action.
 - ☐ Locking.
 - ☐ Non-locking.
 - ☐ "Talk-Listen Switching." Non-lock in the "UP" position, Locking in the "DOWN" position.
- Check color illumination desired in each switching position.

<input type="checkbox"/> "UP" Position	Available Colors
<input type="checkbox"/> "NEUTRAL" Position	<input type="checkbox"/> Red <input type="checkbox"/> Amber
<input type="checkbox"/> "DOWN" Position	<input type="checkbox"/> Green <input type="checkbox"/> Blue
	<input type="checkbox"/> Yellow <input type="checkbox"/> Clear
- Order switching circuits for each position. See "BASIC CONTACT FORMS."
- Specify contacts.
 - ☐ Silver.
 - ☐ Palladium.
- Choose lamp voltage.
 - ☐ 6 V.
 - ☐ 28 V.

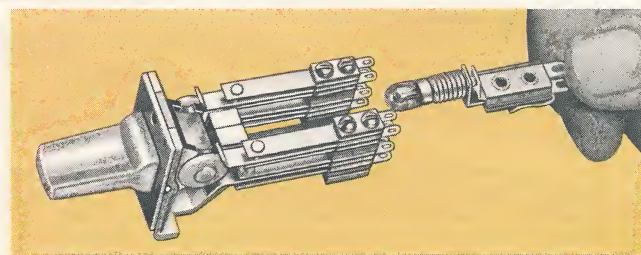
AMBIENT LIGHT SHIELD



These are used where the "Lever-Lite" Switches are mounted on minimum centers. The light shield gives positive separation of lighting between the switches, thus reducing mistakes in switching on large control panels. In mounting, the shield is placed between panel and switch and securely held by the mounting screws. If needed, two shields can be used for one switch to shut out ambient light from both sides.

Part No. P-1864 Pkg. of 10 U.S.A. List Price \$1.00

REMOVABLE LAMP ASSEMBLY



Replace lamp in seconds. Simply reach in and grasp entire lamp assembly. It will easily snap out. Change lamp and slip assembly back. No tools needed, and it is not necessary to disturb wiring.

SPECIFICATIONS

FRAME: Steel, iridescent iridite finish over cadmium plating.

SPRINGS: Spring tempered nickel alloy.

CONTACTS: Fine silver, standard. Palladium available on special order.

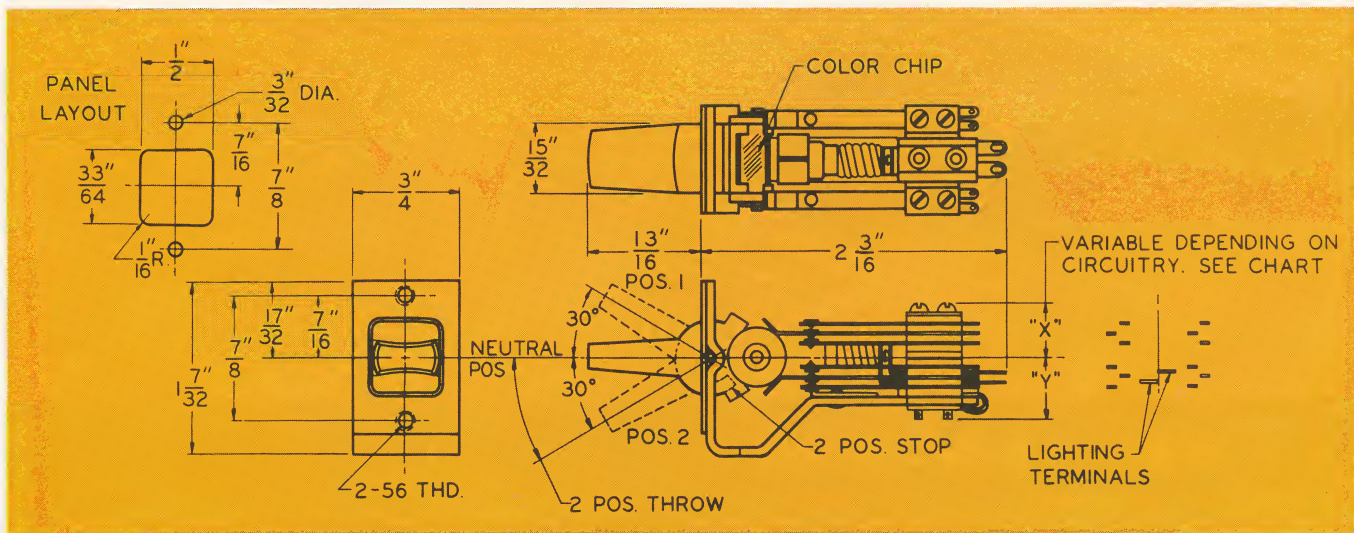
INSULATION: Paper Base Phenolic spacers with plastic tubing through the stack. Lifters of machined fibre.

LEVER: Translucent plastic.

ACTUATOR ROLLER: Nylon.

PIVOT PIN: Stainless Steel.

TERMINALS: Solder, Hot tin dipped.



"LEV-R SWITCHES"

Series 28000

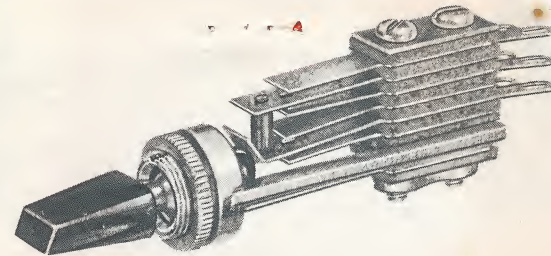
Here is a compact, versatile and low-cost switch that was originally designed to meet the critical operational specifications of an electronic systems manufacturer. This carefully engineered switch is now available to industry for all electromechanical switching purposes, and offers these many advantages:

1. Molded nylon roller designed to assure smooth, easy lever operation over entire life of the switch—also greatly increases the life of the switch.
2. New, small Knob molded directly to the lever eliminating any possibility of loose or lost knobs.
3. The contoured top and bottom design of the Knob with its tapered sides will enhance the appearance of even the most modern control panel.
4. Each switch is furnished with a non-turn ring which slips over slotted bushing to prevent switch from turning in mounting hole. (See drawing below.)
5. This small lever switch requires less than half the space usually needed for a switch providing the same multiple circuitry.
6. Fine silver contacts, rated at 3 amperes, 300 watts, max., non-inductive load, are furnished as standard. Also available on special order, larger silver contacts for higher currents, and Palladium contacts for low current—low voltage circuits.
7. Special nickel-silver springs are assembled into a conventional stack assembly, insulated from each other by phenolic spacers with plastic tubing press fit through the stack, thereby insuring correct alignment of the contacts and providing high insulation resistance.
8. Long springs without any "form" at point of flexing insures long spring life.

"LEV-R SWITCHES," Series 28000, mount on $\frac{5}{8}$ " centers, in panels up to $\frac{3}{4}$ " thick. Requires only one $\frac{1}{2}$ " dia. mounting hole for bushing and one $\frac{1}{8}$ " dia. hole for non-turn device; depth behind panel only $2\frac{1}{4}$ ".

Listed in the Part No. chart are standard circuits in both two and three-position actuators, either locking or non-locking types. For easy identification of special circuits refer to Basic Contact Form and specify by the respective letter identification.

The "LEV-R SWITCH" is an ideal Inter-Communication "Talk-Listen" switch; for such applications we offer, on special order only, two additional circuits with the special feature where the lever locks on one side of neutral, and operates non-locking on the other side.



"LEV-R SWITCHES"—SERIES 28000

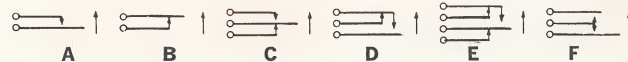
TWO POSITION TYPE				
PART NO. LOCKING	PART NO. NON-LOCKING	U.S.A. LIST PRICE	DIM. "X" MAX.	SCHEMATIC CIRCUIT
28201L	28201	\$2.70	$2\frac{1}{32}$ "	
28203L	28203	3.00	$2\frac{3}{32}$ "	
28204L	28204	3.25	$2\frac{7}{32}$ "	
28206L	28206	3.50	$3\frac{1}{32}$ "	

THREE POSITION TYPE				
28304L	28304	3.35	$2\frac{5}{32}$ "	
28306L	28306	3.65	$2\frac{7}{32}$ "	
28307L	28307	3.70	$2\frac{7}{32}$ "	
28312L	28312	4.50	$1\frac{3}{8}$ "	

Standard Package—5

†Center position open (OFF).

BASIC CONTACT FORMS



SPECIFICATIONS

FRAME: Half Hard Brass, Bright Nickel Plated.

BUSHING AND SHAFT: Machined from Brass, Bright Nickel Plated.

SPRINGS: Spring tempered Nickel Silver.

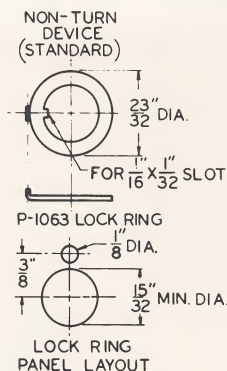
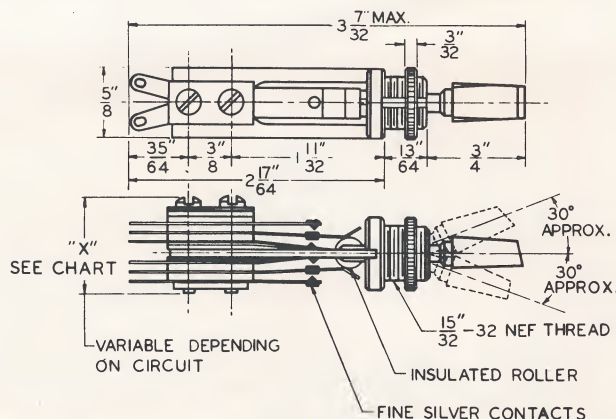
CONTACTS: Fine Silver, standard. Palladium on special order, in production quantities.

INSULATION: Paper Base Phenolic spacers with plastic tubing through the stack. Lifters of punched phenolic or fibre.

ACTUATOR ROLLER: Nylon.

KNOB: Black plastic molded to actuator shaft. Other colors on special order.

MOUNTING HARDWARE: Supplied with one knurled nickel plated brass locknut (T-1071-1); a hex locknut (P-1053-1) available special order. See Catalog H-601 for description.



SWITCHCRAFT[®]

INC.

We reserve the right to change the prices, specifications and/or part numbers contained herein when circumstances make it necessary.

GENERAL OFFICES AND PLANT

5555 N. ELSTON AVENUE

CHICAGO, ILLINOIS 60630, U.S.A.

Area Code: 312 • TEL: 774-1515 • TWX: 312-265-1314